



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,706	05/02/2006	Nobuyuki Taki	12699/38	3701

23838 7590 09/06/2007
KENYON & KENYON LLP
1500 K STREET N.W.
SUITE 700
WASHINGTON, DC 20005

EXAMINER

COLEMAN, KEITH A

ART UNIT	PAPER NUMBER
----------	--------------

3709

MAIL DATE	DELIVERY MODE
-----------	---------------

09/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/577,706

Applicant(s)

TAKI ET AL.

Examiner

Keith A. Coleman

Art Unit

3709

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/2/2006
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- ☐ Notice of Informal Patent Application
- ☐ Other: ____

DETAILED ACTION

Claim Objections

1. Claim 5 is objected to because of the following informalities: In claim 5, 'and' should be 'or' because of the use of 'either of'. Furthermore, claim 5 is interpreted as being in the alternative. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Hasegawa (US Patent No. 5,460,138).

With regards to claims 1 and 7, the patent to Hasegawa discloses a cranking module (22) that is always connected to an output shaft (12) of the internal combustion engine (14) via a power transmission member (20,18) and cranks the internal combustion engine (14) through actuation of a rotating shaft (motor 27 has a rotating shaft), which is interlocked with rotation of the output shaft (12, motor 27 through flywheel 18); a reverse rotation presumption module (10,35,27) that presumes reverse rotation of the internal combustion engine (14, Figure 5, Col. 4, Lines 25-42); and a cranking control module (22, Col. 2, Lines 52-55) that prohibits cranking of the internal

Art Unit: 3709

combustion engine (14) regardless of fulfillment of an auto start condition, when said reverse rotation presumption module (10,35,27) presumes the reverse rotation of the internal combustion engine (14, Figure 5, Col. 4, Lines 25-42).

With regards to claims 2 and 8, the patent to Hasegawa discloses a starting apparatus in accordance with claim 1, wherein said cranking control module (22) controls said cranking module (22) to crank the internal combustion engine (14) even before completion of a stop operation of the internal combustion engine (14), which is triggered by fulfillment of an auto stop condition (Col. 1, Lines 60-67) immediately before fulfillment of the auto start condition (Col. 2, Lines 60-65), when said reverse rotation presumption module (10,35,27) does not presume the reverse rotation of the internal combustion engine (14) under fulfillment of the auto start condition (Col. 2, Lines 60-65).

With regards to claim 5, the patent to Hasegawa discloses a starting apparatus in accordance with claim 1, wherein the power transmission member (18) is a full-time jaw gear (20) that couples the output shaft (12) with the rotating shaft (12).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 3709

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa (US Patent No. 5,460,138) in view of Kani et al. (US Patent No. 5,114,769).

With regards to claim 6 and 11, the patent to Hasegawa discloses wherein the power transmission member is made of an elastomer (Claim 18 from Hasegawa) but does not positively disclose a resin. Kani et al. discloses a clutch made of resin

Art Unit: 3709

(Abstract). It should be noted that a clutch and flywheel are interpreted together as a power transmission member. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the power transmission member of Hasegawa with a resin material in view of the teaching to Kani et al., in order to have a clutch with a lower specific gravity, high strength, and good friction and anti-wear properties at high temperatures (Col. 1, Lines 10-15 from Kani et al.).

8. Claims 3, 4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa (US Patent No. 5,460,138) in view of Kristiansson (US Patent No. 5,323,743).

With regards to claims 3 and 9, the patent to Hasegawa discloses all the limitations of the claimed subject matter, including wherein said reverse rotation presumption module presumes the reverse rotation of the internal combustion engine, based on the measured revolution speed of the internal combustion engine, except a revolution speed measurement module that measures a revolution speed of the internal combustion engine. The patent to Kristiansson discloses a revolution speed measurement module (6,7) that measures a revolution speed of the internal combustion engine (1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the engine of Hasegawa with speed measurement module in view of the teaching to Kristiansson, in order to receive continuous information concerning the running of the engine (Col. 2, Lines 40-45).

With regards to claims 4 and 10, the patent to Hasegawa in combination with Kristiansson discloses a starting apparatus in accordance with claim 3. Hasegawa discloses the reverse rotation. Kristiansson discloses wherein said rotation presumption module (3) presumes the rotation of the internal combustion engine (1) until the measured revolution speed of the internal combustion engine (1) falls below a predetermined level (Col. 2, Lines 63-68) and a predetermined time period elapses after the fall to eliminate any potential for the rotation of the internal combustion engine (1, Col. 1, Lines 28-36). It should be noted that after 5 seconds or predetermined time period as disclosed on Col. 1, Lines 28-36 the engine is deemed as stalled and on Col. 2, Lines 57-61 the control unit 4 activates motor 3.

Conclusion

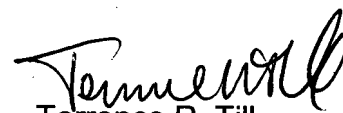
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fuchs (US Patent No. 4,022,164) and Yagi et al. (US Patent No. 5,458,098) show the current state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith A. Coleman whose telephone number is 571-270-3516. The examiner can normally be reached on Monday through Friday between 8-5 Eastern Time.

Art Unit: 3709

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrence Till can be reached on (571) 272-1280. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Terrence R. Till

Supervisory Patent Examiner

KAC

0902